

**Date:** August 12, 2002  
**Project Name:** Thornton Creek  
**Non-Federal Sponsor:** Seattle Department of Parks and Recreation  
**Location:** Matthew's Beach, Lake Washington, Washington  
**Congressional District:** 7  
**Project Completion:** May, 2001  
**Project Cost:** \$382,900  
**Authority:** Section 1135 of WRDA 1986, PL 99-662  
**Project Manager:** Corey Loveland, 206 764-3488  
**Coordinated with:**  
Washington Dept. of Fish and Wildlife  
Washington Dept. of Ecology  
US Fish and Wildlife Service  
National Marine Fisheries Service  
Muckleshoot Indian Tribe  
King County  
Seattle Police Dept.  
Local citizens and community groups



Before--spring 1996



After--6 Oct 2000

## Thornton Creek



View from the edge of Thornton Creek toward Lake Washington



View from the road looking down on the site toward Lake Washington

**Project Location:**

Thornton Creek drains an 11.6 square mile urban watershed and terminates at Matthews Beach on Lake Washington. Matthews Beach Park is located in northeast Seattle and consists of 20.9 acres with 13 acres upland and 7.9 acres of submerged shore. The park is divided into north and south sections that are physically separated by Thornton Creek.

The project area consists of the portion of the park that is south of Thornton Creek.

**Project Description:**

The completion of the Lake Washington Ship Canal in 1916 signaled the beginning of major changes to the shoreline and hydrology of Lake Washington. All the shoreline has been altered from the natural condition due to the lowering of Lake Washington 8.8 feet. The lowering of Lake Washington's water level forced tributary streams to form new channels across the exposed lake bottom to reach the new shoreline. Thornton Creek is an example of dramatic decrease in gradient and velocity as the stream crosses the floor of a shallow embankment that was exposed by the drop in lake level.

Construction and revegetation were largely completed in fall 1998. Biological monitoring is scheduled to occur for 5 years following construction. The site was an open grassy area, frequently saturated during the rainy season. Because of this condition, much of the use in this area of the park was passive. There are native plants and cottonwood trees that line the banks of Thornton Creek, but non-native plants as well. The creek channel is straight as it proceeds through the park. There is a concrete bulkhead located along the south mouth of the creek that extends south along the shoreline approximately 200+ feet. A small spring-fed stream flowed west to east at the southern end of the park.

**Restoration features at Matthews Beach include the following:**

- Suppression of nonnative vegetation and restoration of native riparian vegetation along lower 300 feet of Thornton Creek.
- Planting of native vegetation elsewhere throughout project area, with swales to retain water and enhance wetland function.
- Creation of a fish rearing pond adjacent to Thornton Creek, with outflow to Thornton Creek.
- Diversion of water from small creek at south end of park in surface channel to supply pond.
- "Softening" over and in front of lakeshore bulkhead with fill, rootwads and rocks, and riparian vegetation.
- Human access and viewing areas, including gravel paths, 2 raised observation platforms, and a footbridge over the pond inflow channel, as well as interpretive signs (local sponsor responsibility). These would be consistent with its fish and wildlife restoration mission.

Work to remove and suppress the growth of nonnative vegetation continued through the summer of 1999. Additional mulching and planting has been done by the sponsor on its own as part of its ongoing restoration program. Irrigation is taking place in summers, though much of summer 2000 was missed due to a miscommunication between Seattle city departments.

Biological monitoring is ongoing. Plants that survived summer 2000 are doing well. Fish use of the rearing pond is mostly by small cutthroat trout, with occasional juvenile chinook being found as well. However, coho salmon (the main target fish species) have not been found, and cutthroat are less desirable in this situation. Riparian and wetland

habitat has greatly enhanced the habitat for migratory birds and small mammals while also improving the aesthetic value of Thornton Creek. In general, the habitat diversity, biological productivity, and overall condition of the creek and its environment has improved.

**Project Results/Monitoring Status:**

The willow plantings seem to do very well in all the areas. The health and vigor of many of the shrub species and many of the trees species, with the exception of Oregon ash are very impressive. After 5 to 10 years of growth, the site will support good mix of over and understory species that will provide a variety of benefits to both fish and wildlife. The plantings around the created-channel have also done remarkably well and are already providing shading and organic input benefits to this part of the project. Our efforts at suppression with black plastic and filter cloth were largely successful, but this needs to be expanded to all the areas of knotweed.

Monitoring has shown good growth of most of the several native plant species. Fish monitoring has shown a dominance of small cutthroat trout, though in spring 2001 there were unauthorized plants of Chinook and Coho salmon fry, and cutthroat numbers were down quite a bit in comparison as of late 2001. We don't have good comprehensive reporting, yet hope to correct that soon.

Overall, high survival of most species has occurred, and desirable native regrowth is also present. Target habitat types have been achieved. One planting zone, Zone 8, experienced a high degree of plant mortality. The specified plants were likely too sensitive for the disturbed soil condition, and did not receive regular irrigation. This zone could be replanted with a dryer assemblage of native species. Invasive species have been regularly maintained and appear to be effectively controlled. Monitoring results of Japanese Knotweed and Purple loosestrife indicate cover for these invasives have been significantly reduced, and eliminated in some areas.